Are syntax and semantics modality-blind?

Testing Esipova's Conjecture with ellipsis

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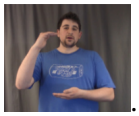
1 Introduction

Gestures are a topic of much recent interest in formal linguistics, especially with respect to their interpretive properties.

- Co-speech gestures (CSGs) are perhaps the most widely discussed.
  - CSGs "co-occur with some verbal expression and contribute some further information about its denotation", as illustrated below (Esipova 2019a:1). (See this footnote[1] for general remarks about the data.)

(1) John might order a beer  .
→ If John orders a beer, it will be large. *projecting*

Until very recently, the literature has assumed that their gestural modality gives CSGs a special semantic status.

- Roughly, they are either always interpreted as
  - supplements, akin to appositives (Ebert 2014), or as
  - cosuppositions, akin to truth-conditionally vacuous modifiers (Schlenker 2018, et seq.)

In contrast, Esipova (2019b,c) develops a compositionally-driven approach:

- Modifier CSGs behave like their spoken counterparts; their interpretation depends on how they compose, not on some intrinsic property determined by modality.
  - Depending entirely on their context, then, CSGs can be interpreted as supplements, non-restricting modifiers, or restricting modifiers.
- Esipova refers to this as the *No Gesture-Specific Compositionality* Principle, but which we might call instead:

(2) **Esipova's Conjecture** (Esipova 2019b,c)
Syntax and semantics are modality-blind.

[1] We adopt some of the same notational conventions for CSGs in the literature. Underlining roughly indicates the temporal alignment of the CSG with respect to the spoken content it modifies. Images are included on the first appearance of a particular CSG; afterward, we abbreviate them in the data by using SUBSCRIPTED SMALL CAPS. All of the gestural images in this handout are taken from the cited sources; none are original. The new data reported here have been checked with several native speakers, but would ideally be confirmed experimentally. Most examples involve only iconic adnominal modifiers, and the DP that introduces them is definite (often possessed). This is by design: in addition to keeping the examples maximally similar to many of those already discussed in the literature, the existence/uniqueness inference borne by definites can help highlight when a particular modifier is or isn't being recovered. We mostly present data from predicate ellipsis (VPE), though we include other ellipsis types in the body for completeness, noting that we know of no significant variation along these lines (mutatis mutandis).

- Thus, the interpretive properties of a particular CSG (e.g. whether it projects / whether it is truth-conditionally vacuous) are determined only by how it composes;
  - No special semantic status due to being a gesture *per se*.
  - Gesturehood is just a PF property of Vocabulary Items, which are inserted late.
- This approach is parsimonious, and appealing for the clear predictions it makes.
  - E.g., CSGs should behave like their spoken counterparts with respect to phenomena that are sensitive to the at-issue / non-at-issue divide (i.e. whether a piece of content makes a truth conditional contribution).

This is where ellipsis comes in.

- Ellipsis recovery seems able to freely ignore truth-conditionally vacuous content (except lexical presuppositions), while at-issue content is recovered obligatorily.
  - This makes ellipsis a potentially valuable diagnostic for testing interpretive claims about CSGs.

In this talk, we explore patterns of (non-)recovery of CSGs under ellipsis, using existing data and adding several new observations.

- We observe that when CSGs are forced to take a restricting (at-issue) reading, they are obligatorily recovered.
  - In this respect, they behave exactly like truth-conditionally relevant content in the spoken modality.
  - This can be taken as further support for Esipova's Conjecture.
- By the same token, CSGs can be ignored under ellipsis just in case they are truth-conditionally vacuous;
  - Again, this is identical (modulo lexical presuppositions) to the behavior of non-at-issue content in the spoken modality, as implied in the literature.

These results are straightforwardly consistent with the composition-driven approach.

2 Background: CSGs and the taxonomy of projecting vs. non-projecting content

CSGs have been the subject of much recent work, especially from the perspective of formal semantics and pragmatics (Ebert and Ebert 2014, Ebert 2014, 2017, Tieu et al. 2017, 2018, Zlogar and Davidson 2018, Schlenker 2018, Esipova 2018, 2019a,b,c,d, Hunter 2019, a.o.; see Abner et al. 2015 for a general overview on gesture):

- investigates the semantico-pragmatic contribution of gestures in spoken utterances, especially CSGs;
- focuses on the *gesture projection problem*: if and how gestures can "project" out of (i.e., not be interpreted within) the scope of semantic operators, e.g. negation, conditionals, etc.;
- (mostly) deals with iconic, non-conventionalized gestures (cf. Esipova 2019d, poster at LSA 2020);
- generally agrees that gestures contribute projecting (truth-conditionally vacuous) inferences by default;
- does <u>not</u> agree:
  - on the mechanisms responsible for gestural projection;
  - whether such behavior is intrinsic to their gestural modality.

There are three main analyses concerning the interpretation of CSGs:

- the *supplemental* analysis (Ebert and Ebert 2014, Ebert 2014, 2017):
  - claims that CSG are *supplements* (e.g. appositives; Potts 2005):

(3) a. I brought a bottle$_{\text{LARGE}}$ to the talk.
b. I brought a bottle, which (by the way) was this large$_{\text{LARGE}}$, to the talk.

  - implies that the projection profile of gestures is determined by their co-speech status.

- the *cosuppositional* analysis (Schlenker 2018; see also Tieu et al. 2017, 2018):
  - claims that CSG are *cosuppositions* (i.e. assertion-dependent presuppositions; Schlenker 2018)

(4) a. John might order a beer$_{\text{LARGE}}$.
b. If John orders a beer, it will be large.

  - also implies that the projection profile of gestures is determined by their co-speech status.

- the *composition-driven* analysis (Esipova 2018, 2019a,b,c,d):
  - claims that CSGs are defined by the way they project, which is determined by how they *compose*;
  - deals with iconic (non-conventionalized) and non-iconic (conventionalized) gestures;
  - implies that the projection profile of gestures is not determined by their co-speech status; i.e. they are *bona fide* linguistic objects irrespective of their modality;
  - means that CSGs can be either restrictive modifiers, non-restrictive modifiers, or supplements; i.e., it captures several different interpretations.
    - This taxonomy is illustrated below in Table 1 (see also Leffel 2014):

Table 1: Modifiers vs supplements (adapted from Esipova 2019c:128)[2]

Modifiers		**Supplements**
Restricting (at-issue)	**Non-Restricting (non-at-issue)**	Non-Restricting (non-at-issue)
truth-conditionally non-vacuous	truth-conditionally vacuous	truth-conditionally vacuous
non-projecting	projecting	projecting
Example (5)	Example (6)	Example (7)

(5) *Restricting modifier* (Esipova 2019d:555)[3]
I should be eating less **saturated** fats and more **healthy** fats.
$\not\rightarrow$ I should be eating less fats and more fats.
$\not\rightarrow$ All fats are {saturated, healthy}.

(6) *Non-Restricting modifier* (Esipova 2019d:555)
Context: The speaker believes that processed meat causes cancer.
I shouldn't be eating so many deadly hot dogs.
$\rightarrow$ I shouldn't be eating so many hot dogs.
$\rightarrow$ All hot dogs are deadly.

[2] Certain other readings are possible in principle (e.g. non-projecting non-restricting), but we omit them here as they are degraded or unacceptable (see Esipova 2019a for experimental results to this effect).

[3] **Bold** indicates focal stress. See Leffel (2014), Esipova (2019b:38-39), and further below on the role of contrastive focus in bringing out restricting readings for modifiers (gestural and otherwise).

(7) *Supplement* (adapted from Esipova 2019d:554)
I will invite Zoe, (who is) a stuntwoman.
→ I will invite Zoe.
→ Zoe is a stuntwoman.

In what follows, we adopt the taxonomy and terminology in Table 1.

3 Ellipsis and CSGs

Ellipsis is subject to a condition on *recovery/identity*.

- Intuitively: an E(llipsis)-site is in some way "identical" to its A(ntecedent).
- This has been stated both as a semantic requirement, and as a syntactic one (see Merchant 2018a for an overview):
  - Proponents of a semantic approach point to cases of syntactic non-identity between E-site and antecedent (e.g. *vehicle change*: *I didn't see anybody, but Sue did [–].*)
  - Proponents of a syntactic approach are concerned with *connectivity effects*:
    - Signs that material outside an ellipsis site is syntactically related to ellipsis-internal material, as specified in its antecedent (e.g. case matching, P-stranding sensitivity, etc.)
  - Some approaches incorporate aspects of both (e.g. semantic accommodation of mismatched antecedents constrained by syntax: Thoms 2015)

That being said, certain types of meaning can apparently be ignored when recovering an E-site.

3.1 Ellipsis and non-restricting CSGs

To our knowledge, Schlenker (2015) is the first to ask how CSGs behave with respect to ellipsis.

- On the basis of a single example, he notes that CSGs can be ignored under ellipsis:[4]

(8) *Context: I had two guys standing in front of me, one of them very short and the other one very tall.*

The tall one allowed me to remove his glasses , but the short one didn't [–].
⇝ The short person's glasses were high up

- The ellipsis site here can be resolved as though the elided nominal *glasses* is completely unmodified (i.e., they are not interpreted as being high up, or in any other particular location).
  - Since this inference from the antecedent CSG is not part of the E-site, we can say that ellipsis here "ignores" the antecedent CSG.

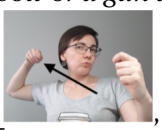
Crucially, this example involves a non-restricting reading of the CSG.

- We will return to this shortly.

[4] In fact Schlenker's (2015) claim is broader than this: he claims that CSGs can be ignored in the focus dimension generally, on the basis of an example showing that calculation of focus alternatives under *only* behaves in a similar way (see Schlenker and Chemla 2018:§2 and Esipova 2019b:§7.2.2 for related discussion). We leave this intriguing connection aside, as well as the potential connection to attitude reports proposed in Esipova (2019b:169), but acknowledge that these are worthy avenues of future research.

Esipova (2019b:§7.2.2) adds others, including one involving an adverbial modifier (rather than the adnominal ones that the literature, and we, focus on):

(9) *Context: Zoe and Kim are participating in a multi-sport competition. For the shooting part of the competition, participants had to choose a longbow or a gun and then shoot at the target.*

Zoe has already shot at the target  , but Kim hasn't [–].

⇝ If Kim shoots at the target, she'll shoot a longbow.

A brief aside: if Esipova's Conjecture is correct – as we suspect it is – and syntax is modality blind,

- Then modifier CSGs will be merged in normal adjoined positions (e.g. as manner adverbs/PPs adjoined to VP), just like their spoken counterparts.
- This raises a potential confound for examples such as (9) which bears some attention.
- The confound is relevant for all cases where the putative "ignored" content is construed as a modifier of XP in the context of XP ellipsis (vs. ellipsis of some higher YP).
  - That is, modified VPs in the context of VPE, modified NPs in the context of NPE, etc.
- The issue: the absence of the modifier in the E-site's interpretation might not be due to it being ignored in the relevant way (i.e. due to its projecting status)...
  - ...but because a smaller, unmodified XP is able to serve as the antecedent, instead.

(10) $\ldots [_{XP}\ \text{ADJUNCT}\ [_{XP}\ \text{X}\ [_{YP}\ \ldots]\ ]]$

- Certain independent factors might influence the antecedent choice (e.g. see Sailor 2014:§1.4.3 and Moulton 2019 on VPE), but the point stands.
  - To avoid this, examples should be constructed so the modified constituent and the elided constituent cannot be the same.

Back to the main thread: we provide examples from other ellipsis types (NPE and TPE) for completeness:

- These behave as VPE does: non-restricting CSGs can be ignored under ellipsis.

(11) *Context: John has only one dog, and it is large. Sam also has only one dog, but it is small.* *NPE*
We heard some of **John's** stories about his $\text{dog}_{\text{LARGE}}$, but we didn't hear any of **Sam's** [–], which is surprising because he's obsessed with that little thing.
⇝ Sam's dog is large

(12) *Context: we both know Mary has only one dog.* *TPE*
A: I wonder where$_{\text{I}}$ Mary's $\text{dog}_{\text{SMALL}}$ is t_{I}.
B: In the kitchen$_{\text{I}}$ [–], but he's actually enormous now.
⇝ Mary's dog is small

So, CSGs can be ignored under ellipsis when they are non-restricting.

- In this respect, they behave exactly like other non-restricting content with respect to ellipsis recovery.
- For example, expressives, appositives, and even non-restricting adjectives can be ignored:

(13) *Expressives* (Potts et al. 2009:§5)
A: I saw your fucking dog in the park.

B: No, you didn't [–]; you couldn't have [–]. The poor thing passed away last week.
⇝ B dislikes their own dog

(14) *Appositives* (Esipova 2019b:168)
Stephanie brought her dog, (which is) a large beast, to the party, but Lucy didn't [–].
⇝ Lucy's dog is a large beast

(15) *Non-restricting adjectives* (see also *ibid.*)

a. *Context: Mary has only one dog, as does B.* *VPE*
A: Mary won't be bringing her obnoxious dog to the party, as one of the guests is allergic.
B: Ah okay, then I won't [–] either.
⇝ B believes their dog is obnoxious

b. *Context: John has only one dog, and it is large. Sam also has only one dog, but it is small.* *NPE*
We heard some of John's stories about his enormous dog, but we didn't hear any of Sam's [–], which is surprising because he's obsessed with that little thing.
⇝ Sam's dog is enormous

c. *Context: we both know Mary has only one dog.* *TPE*
A: I wonder where$_{\mathrm{I}}$ Mary's obnoxious dog is t_{I}.
B: In the kitchen$_{\mathrm{I}}$ [–], but he's actually really nice.[5]
⇝ Mary's dog is obnoxious

- These are all non-restricting in context, and therefore truth-conditionally vacuous.
  - The silhouette of a generalization begins to emerge:

(16) Truth-conditionally vacuous material present in A can be excluded from the interpretation of E.[6]

But this is immediately contradicted by the behavior of several different kinds of presuppositions (Esipova 2019b:167):

(17) a. Jackie stopped smoking, but Daisy didn't [–].
→ Daisy used to smoke.

b. O-Ren knows that she is in danger, but Vernita doesn't [–].
→ Vernita is in danger. (sloppy)

c. Kim regrets cheating on the exam, but Abernathy doesn't [–].
→ Abernathy cheated on the exam.

- However, what unites all of these presuppositions is that they are <u>lexical</u>:
  - They arise as part of the lexical meaning of *stop, know, regret,* etc.
  - This is evidently an important distinction when it comes to distinguishing the sort of truth-conditionally vacuous material that can and cannot be ignored under ellipsis.
    - Perhaps the generalization in (16) is on track, then, so long as lexical presuppositions are excepted.[7]
- The updated statement would then be:

(18) With the exception of lexical presuppositions, truth-conditionally vacuous material present in A can be excluded from the interpretation of E.

[5] These have the general character of the cases discussed in Lipták (forthcoming), which she argues to involve mixed quotation (such that the ellipsis site has an instance of the element being corrected, albeit a quoted one, meaning no contradiction arises). However, her cases all involve correction of the verb, while ours involve an adnominal modifier. Still, we would ideally like to exclude the possibility of a mixed quotation analysis here. This will have to wait until we can determine what (if any) predictions such a powerful system makes.

[6] There may also be cases where such material <u>must</u> be excluded. For example, AnderBois (2011) notes that appositive-internal content cannot serve as the antecedent for sluicing (cf. VPE), though some of those empirical points are debated in the literature.

[7] We can imagine various ways of implementing this; see Appendix A.

This is a striking generalization, and we suspect it may not hold up.

- But even if it captures a strong tendency, it is worth pursuing futher.

We turn now to the behavior of truth-conditionally relevant modifiers under ellipsis, starting with CSGs.

3.2 Ellipsis and restricting CSGs

To our knowledge, it has not been previously noted that CSGs are recovered obligatorily under ellipsis just in case they receive a restricting reading in context.[8]

- The literature has mostly relied on contrastive focus to force restricting readings for CSGs, so we start there:

(19) *Context: Julia owns two dogs, a small one and a big one.*
Julia won't bring her **dog**$_{\text{SMALL}}$, but she might bring her **dog**$_{\text{LARGE}}$. If she does [–], we're going to need a bigger car.

- This is only coherent if the ellipsis site is recovered with the restricting CSG in the antecedent.
  - Thus, this CSG cannot be ignored under ellipsis, which we take to be because of its restricting (at-issue) status.

Putting ellipsis aside for a moment, it is also possible to get restricting readings for CSGs in non-contrastive contexts:

(20) *Context: we are packing for a trip. We own two coolers, one small and one large, and we both know this fact.*
I just had an idea: if we bring our cooler$_{\text{LARGE}}$, we could pack all our booze.

- The CSG in (20) is restricting: it picks out which of the two coolers I want to bring.
  - A non-restricting reading would generate a false uniqueness inference, given the context.
- This restricting reading is required solely by the context; contrastive focus is not responsible.
  - Consider the intonation of its verbal counterpart: nuclear stress falls on *cooler*, not on *large*.[9]

(21) *Context: same as (20)*
I just had an idea: if we bring our [large cóóler], we could pack [all our bóóze].

- If any constituent is focused here, it is at least as large as the whole DP; the modifier itself is not focused. This is important:
  - The nascent literature relies on (contrastive) focus to force at-issue interpetations for CSGs (Esipova 2018, 2019a).
    - With good reason: focused material is almost always at-issue (see esp. Leffel 2014 and Esipova 2019b:38-39)
    - Our point: focus may be a sufficient condition for bringing out such readings, but not a necessary one.

Getting back to ellipsis: the above is especially relevant given that non-contrastive restricting CSGs are recovered obligatorily (like the contrastive ones):

(22) *Context: same as (20)*
A: I just had an idea: let's [bring our cooler$_{\text{LARGE}}$].
B: If we do [–], we could pack all our booze! (It won't all fit in the small one.)

[8] Schlenker and Chemla (2018:620) note this effect for pro-speech gestures. The fact that the pro-speech vs. co-speech distinction is not relevant here (in ellipsis contexts when both are restricting) is of course entirely consistent with Esipova's composition-driven approach.

[9] Prosodic prominence is not always a reliable diagnostic for semantic focus, as Ahn and Sailor (2018) discuss in detail; however, the confounding factors they discuss are not obviously involved here.

- Elided material cannot be focused, and indeed must be entirely given.[10]
  - This tells us that it is the restricting status of the antecedent CSG that determines whether the E-site CSG gets such an interpretation.

Additional examples are below:

(23) *Context: Zoe and Kim are participating in a multi-sport competition. For the shooting part of the competition, participants had to choose a longbow or a gun and then shoot once at the target. Both Zoe and Kim were ready to shoot.*
Zoe was [going to shoot at the target$_{\text{LONGBOW}}$], but Kim wasn't [–]: she was using her gun instead.
⇝ When Kim shoots at the target, she'll shoot a longbow.

- In context, the ellipsis site cannot be interpreted without the CSG.
  - If it were, the result would be *Kim wasn't going to shoot at the target*, which is contradicted by both the context and the elaboration.

(24) *Context: for the shooting part of the competition, participants first shoot a longbow once and then a gun once.*
If Zoe [hits the bullseye when she shoots$_{\text{LONGBOW}}$], I'll give you $10. If she doesn't [–], I won't bet on her gun shooting.

So CSGs are obligatorily recovered just in case they are restricting.

- This is not surprising: restricting modifiers make at-issue (truth-conditionally relevant) contributions.
  - Such information cannot be ignored by the ellipsis recovery procedure.

This data in this section support the compositionally-driven approach:

- CSGs behave just like their spoken counterparts in the above respect.
- In other words, spoken modifiers are (unsurprisingly) recovered obligatorily when they are at-issue:

(25) *Context: we are packing for a trip. We own two coolers, one small and one large, and we both know this fact.*
A: I just had an idea: let's [bring our large cooler].
B: If we do [–], we could pack all our booze! (It won't all fit in the small one.)

Again, we see no relevant difference between CSGs and their spoken counterparts as far as ellipsis is concerned.

4 Conclusion

In sum, the composition-driven approach to CSGs predicts that they should pattern like their spoken counterparts in the same contexts.

- This is brought out clearly with ellipsis, as it seems sensitive to the at-issue / non-at-issue distinction.
- Our tentative conclusion is the following:
  - Non-at-issue (projecting, truth-conditionally vacuous) content – including CSGs – can be ignored under ellipsis.
  - At-issue (non-projecting, truth conditional) content – including CSGs – cannot be ignored under ellipsis.

[10] See Merchant (2018b:§5) for recent refinement of this point, with provisos that don't bear on the present point.

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APPENDICES

A Implications for ellipsis identity

Schlenker and Chemla (2018) suggest that the ignoring of (non-restricting) CSGs under ellipsis is akin to the kinds of effects seen in what are known as *vehicle change* contexts (Fiengo and May 1994):

(26) I turned in my assignment, but most of the other students didn't ~~[turn in their assignment]~~.

- But the comparison is not straightforward:
  - While the individual phi-featural specifications are ignored, the phi bundle itself is still taken to be present, and evidently cannot be ignored.
  - We may see a change/substitution of feature specifications in vehicle change contexts, but not wholesale ignoring of the phi-bearing element/position (see Fiengo and May 1994:ch. 5 for extensive discussion).
  - That said, the effect we see above with e.g. expressives is not obviously reducible to simple substitution of particular featural specifications:
    - There is no feature on *fucking* that could be subsituted during recovery such that the resulting interpretation is that B feels no animus toward their own dog.[11]
- Rather than undergoing some kind of substitution of feature specifications, the content discussed here simply seems to play no role in the recovery procedure whatsoever.
  - It looks like the element and/or its position really is ignored, unlike with phi-bundles in vehicle change contexts.

But how does this ignoring of non-at-issue modifiers work with respect to the identity condition on ellipsis?

- As long as the procedure for calculating semantic identity is able to ignore such material (but not lexical presuppositions, perhaps by lexical integrity), there is no problem on the semantic side.
  - This could perhaps be made to fall out from the focus dimension implicated by e-GIVENness (Merchant 2001).
- But there would still be a problem on the syntactic side (see above on why we need to care about syntactic identity).
  - If an antecedent contains non-at-issue content that is not present in the E-site by way of being "ignored", then that E-site is not syntactically identical to that antecedent (on the assumption that we don't have non-overt, syntactically-present counterparts to each type of ignorable content).
- However, the theory of antecedent accommodation in Thoms (2015) may provide a way of satisfying both semantic and syntactic identity requirements in these cases.
  - An antecedent A that is semantically identical (modulo non-at-issue content, we propose) to an E-site may differ syntactically from that E-site so long as an alternative of A can be generated whose syntax does match.
  - While Thoms only discusses the generation of such alternatives involving *substitution* of a particular node with another, his system (built on that of Katzir 2007) allows *deletion* of nodes as well.
    - Perhaps the instances we discuss here of ignored non-at-issue content are examples of just such deletion cases, not previously observed.

[11] See Potts (2005:168) on the 'bad' function in the meaning of expressives, and the possibility of a positive counterpart of expressives like *fucking* (e.g. *brilliant* in British English, which actually seems to have a very different distribution). Since the E-site can be recovered here without the interpretation of any expressive content (i.e. anything expressing a heightened emotional state, negative or positive), we dismiss the possibility of a featural substitution along those lines having taken place here.

B Conventionalized CSGs

Esipova (2019d) argues that non-iconic, conventionalized CSGs behave broadly the same as iconic ones with respect to her composition-driven approach.

- For example, they are happy to be interpreted as non-restricting modifiers, but a restricting reading can be forced, e.g. by using focus.[12]

(27) ?If Kim brings her **brother** , I'll fight with him, but if she brings her **normal** brother, that's OK.

We note that this restricting reading also arises in certain non-contrastive contexts.

- As before, restricting modifiers (gestural or otherwise) are necessarily recovered under ellipsis.
  - This is evidently true whether the CSG is iconic or conventionalized.

(28) *Context: Mary has two dogs, one normal and one crazy, and we both know that.*
A: Mary might bring her crazy dog to the party.
B: If she does [–], let's go to her house and hang out with the normal one instead.

(29) *Context: Mary has two dogs, one normal and one crazy, and we both know that.*
A: Mary might bring her dog$_{\text{CRAZY}}$ to the party.
B: If she does [–], let's go to her house and hang out with the normal one instead.

[12] Some conventionalized gestures have fixed compositional status (e.g. FINGERS-CROSSED, which can only compose as a supplement: see Esipova 2019d:5), perhaps stored as part of their lexical entry, akin to idioms.